

REMARKS

The Office rejects claims 1-17 and allows claims 20, 21, and 23-25 in the subject application. Applicant thanks Primary Examiner Gautam Patel for the phone interview (Examiner Interview) with Applicant's Attorney Shahpar Shahpar on October 26, 2004. Applicant outlines some of the points of discussion in this Examiner Interview and responds to the outstanding Office Action below. Based on this Examiner Interview, Primary Examiner Patel indicated an allowance of all pending claims.

Claims 1-17, 20, 21, and 23-25 (2 independent claims; 22 total claims) remain pending in the application. Reconsideration of this application is respectfully requested.

35 USC § 103 REJECTIONS

The Office rejects claims 1-8 and 10-17 under 35 USC §103(a) as allegedly being unpatentable over Applicants Admitted Prior Art ("AAPA") in view of Taguchi¹, newly relied upon Yamada², and Ito³. Applicant respectfully traverses the rejection.

AAPA Reference

AAPA discloses a semiconductor laser driving apparatus 22 having a recording and reproduction current generation section 518, a high frequency current generation section 519, and a current driving section 511.⁴

Taguchi Reference

Taguchi discloses a circuit for supplying high frequency current to a semiconductor laser, which is used as a light source in an optical pickup device for reading out information that has been recorded on optical discs.⁵ Drive current from an APC 60 flows to a filter 70, and is supplied to a semiconductor laser 82 and a high frequency generator 50. High frequency current generator 50 has an oscillator 56, a self-bias circuit 90, and an output transistor 52. Oscillator 56, a coupling capacitor 55, and self-bias circuit 90 form a high pass filter (HPF) for restricting the passage of low-

¹ U.S. Patent No. 6,011,768, issued on January 4, 2000 to Kabushiki Kaisha Toshiba.

² U.S. Patent No. 4,967,417, issued on October 30, 1990 to Canon Kabushiki Kaisha.

³ U.S. Patent No. 5,090,001, issued on February 18, 1992 to Olympus Optical Co., Ltd.

⁴ Present Application, page 7 and Figure 17.

⁵ Taguchi, column 1, lines 6-12.

frequency noise components in the oscillating output. The HPF eliminates the low-frequency noise components of the oscillating output (generated by oscillator 56).⁶

The Office now cites filter 70 (instead of previously cited oscillator 56, coupling capacitor 55, and self-bias circuit 90) as allegedly disclosing "a filter for operating so as to attenuate the enhanced high frequency component included in the high frequency current...and...in the recording current" as recited in claim 1.

1. Not High Frequency Current And Recording Current

But Taguchi is only for reading out information (that has previously been recorded by another system). As such, Taguchi fails to disclose "a filter for operating so as to attenuate the enhanced high frequency component included in the high frequency current...and...in the recording current" as recited in claim 1 (and claims 2-8 and 10-17, which variously depend from claim 1).

In addition, Taguchi superposes the high-frequency current onto the drive current from a light quantity controller (APC) 60.⁷ But Taguchi does not teach, advise, or suggest a recording current as recited in claim 1, because Taguchi only reads out information.⁸ As such, Taguchi fails to teach, advise, or suggest "the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current" as recited in claim 1 (and claims 2-8 and 10-17, which variously depend from claim 1) (emphasis added).

Still further, as conceded by the Office, Taguchi fails to teach, advise, or suggest "the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current based on a linear velocity of the optical disc" as recited in claim 1 (and claims 2-8 and 10-17, which variously depend from claim 1) (emphasis added).

2. Not Current Generated By High Frequency Current Generation Section

In Taguchi, drive current from APC 60 flows to filter 70, and is then supplied to semiconductor laser 82 and high-frequency current generator 50. Semiconductor laser

⁶ See Taguchi, column 5, lines 8-51 and Figure 3.

⁷ Taguchi, column 8, lines 56-58.

⁸ Taguchi, column 1, lines 7-12.

82 converts the drive current into optical output and emits laser light. Feedback through APC 60 supplies an optimum value of drive current to semiconductor laser 82.⁹

But Taguchi fails to disclose "a filter for operating so as to attenuate...the high frequency current generated by the high frequency current generation section and...the recording current generated by the recording current generation section" as recited in claim 1 (and claims 2-8 and 10-17, which variously depend from claim 1) (emphasis added). Taguchi operates in contradiction to this feature of the claimed invention. The filter of the claimed invention attenuates the high frequency current generated by the high frequency current generation section and the recording current generated by the recording current generation section. In contrast, Taguchi filters a drive current from APC 60, and does not filter a drive current from current generator 50. Furthermore, Taguchi does not disclose a recording current, and thus, fails to disclose a filter to attenuate the recording current generated by the recording current generation section as recited in claim 1.

3. Taguchi Fails To Disclose And Contradicts

Thus, Taguchi fails to disclose and contradicts teaching "a filter for operating so as to attenuate the enhanced high frequency component included in the high frequency current generated by the high frequency current generation section and the enhanced high frequency component included in the recording current generated by the recording current generation section" as recited in claim 1 (and claims 2-8 and 10-17, which variously depend from claim 1) (emphasis added). Therefore, claims 1-8 and 10-17 are patentable over AAPA in view of Taguchi, Yamada, and Ito.

Yamada Reference

Yamada discloses a laser driving device with two reference signal sources and an optical information recording apparatus. Analog switch 11 in Yamada receives reference voltages for recording and reproducing and selects a voltage for input into a low pass filter (LPF) 12. Indeed, LPF 12 outputs a signal obtained by attenuating the

⁹ Taguchi, column 5, lines 25-40.

high frequency component of the input signal.¹⁰ LPF 12 outputs this signal, which is a reference signal for various other elements.¹¹

But Yamada fails to teach, advise, or suggest "a switching section for switching the filter on or off so that the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current based on a linear velocity of the optical disc" as recited in claim 1.

First, analog switch 11 is not "for switching the filter on or off". Rather, analog switch 11 switches between a reproduction reference voltage and a recording reference voltage for input into LPF 12.¹² Accordingly, Yamada fails to disclose "a switching section for switching the filter on or off" as recited in claim 1.

Second, analog switch 11 feeds a signal to LPF 12, and LPF 12 outputs a signal obtained by attenuating the high frequency component. Accordingly, LPF 12 attenuates the high frequency component, so that Yamada fails to disclose "a switching section for switching the filter on or off so that the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current" as recited in claim 1 (emphasis added). If LPF 12 attenuates the high frequency component, then there is no enhanced high frequency component to be superposed on a multi-pulse of the recording current.

Third, Yamada fails to disclose "the enhanced high frequency component included in the recording current is superposed on at least one of the plurality of multi-pulses included in the pulse of the recording current based on a linear velocity of the optical disc" as recited in claim 1 (emphasis added).

Therefore, claims 1-8 and 10-17 are patentable over AAPA in view of Taguchi, Yamada, and Ito.

Ito Reference

Ito discloses an information recording/reproducing apparatus having an access device which moves a light spot 103 in the radial direction of an optical disk 102 to

¹⁰ Yamada, column 4, lines 47-49.

¹¹ Yamada, column 4, lines 38-55.

¹² Yamada, column 4, lines 42-47.

access a desired information track of optical disk 102.¹³ Upon receiving a difference signal, a tracking actuator 106 drives a lens or mirror to move light spot 103 in order to cause the relative velocity between the light spot 103 and the information track to coincide with a target velocity.¹⁴

But Ito fails to make up for the shortcomings of AAPA, Taguchi, and Yamada. Therefore, claims 1-8 and 10-17 are patentable over AAPA in view of Taguchi, Yamada, and Ito.

Iwasa Reference

The Office rejects claim 9 under 35 USC §103(a) as allegedly being unpatentable over AAPA, Taguchi, Yamada, and Ito as applied to claim 1 above and further in view of Iwasa¹⁵. Applicant respectfully traverses the rejection.

Iwasa discloses a write control system for writing optical disk data, where the data maintains an accurate pit shape even during high density data recording.¹⁶ This is done to get regenerative signals having a better carrier-to-noise (CNR) ratio.

In view of the foregoing arguments regarding AAPA, Taguchi, and Yamada in connection with claim 1, claim 9 (which is depend upon claim 1) is also patentable over AAPA, Taguchi, Yamada, and Ito as applied to claim 1 above and further in view of Iwasa. Moreover, Taguchi is concerned with reading out information that has already been recorded on an optical disc. But Iwasa is limited to writing (or recording) optical disk data, so that these two different systems are not relevant to each other. Thus, there is no teaching, suggestion, or motivation to combine these references, and there would not be a reason to. Regardless, in light of the foregoing in connection with claim 1, the combination fails to teach, advise, or suggest the missing claimed elements. Therefore, claim 9 is patentable over AAPA, Taguchi, Yamada, and Ito as applied to claim 1 above and further in view of Iwasa.

¹³ Ito, column 6, lines 37-40.

¹⁴ Ito, column 7, lines 30-37.

¹⁵ U.S. Patent No. 5,327,411, issued on July 5, 1994 to Fujitsu Limited.

CONCLUSION

Finally, the Office makes various statements that are allegedly well known in the art. For example, the Office alleges that most high pass filters are associated with noise and the high frequency generation and management of high frequency signals are inherently associated with noise. The Office further uses variations of this conclusion as the basis for combining AAPA and Taguchi. Applicants respectfully note that the Examiner provides no prior art teaching or suggestion which would provide a basis for the Examiner's conclusions. The Examiner may take official notice of facts outside the record which are well known in the art. If the Applicant traverses such assertion, the Examiner should cite a reference in support of his or her position. M.P.E.P. §2144.03.

Thus, the Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application is thus requested. Applicant invites the Office to telephone the undersigned if he or she has any questions whatsoever regarding this Response or the present application in general.

Respectfully submitted,

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¹⁶ Iwasa, column 4, lines 54-60.